

CLAIMS

1. A multi-codebook fixed bitrate CELP signal block encoding/decoding method,
including the steps of
selecting, for each signal block, a corresponding codebook identification in
accordance with a deterministic selection procedure that is independent of signal type;
and

encoding/decoding each signal block by using a codebook having said selected
codebook identification.

2. The method of claim 1, including the steps of

providing several sets of codebooks;

determining, for each signal block, a corresponding set of codebooks based on
previously determined values of other signal block characterizing parameters;

selecting, for each signal block, a corresponding codebook identification in the
determined set in accordance with a deterministic selection procedure that is inde-
pendent of signal type; and

encoding/decoding each signal block by using a codebook from said deter-
mined set having said selected codebook identification.

3. The method of claim 1, including the steps of

selecting, for each signal block, a corresponding codebook identification in
accordance with a deterministic selection procedure that is independent of signal type;

providing several sets of codebooks;

determining, for each signal block, a corresponding set of codebooks based on
previously determined values of other signal block characterizing parameters; and

encoding/decoding each signal block by using a codebook from said deter-
mined set having said selected codebook identification.

4. The method of claim 2 or 3, wherein said other parameters are channel protected.

5. The method of claim 4, wherein only parts of said channel protected parameters that
allow error detection are used.

6. The method of claim 2 or 3, wherein said deterministic selection procedure is defined by cyclically stepping through each codebook identification in said sets of codebooks.

7. The method of claim 2 or 3, wherein said deterministic selection procedure is defined by randomly stepping through each codebook identification in said sets of codebooks.

8. The method of claim 1, wherein said codebooks are fixed codebooks.

9. The method of claim 8, wherein said codebooks are algebraic codebooks.

10. The method of claim 1, wherein said signal block is an audio frame.

11. The method of claim 1, wherein said signal block is an audio subframe.

12. A multi-codebook fixed bitrate CELP signal block encoder/decoder, including
 a codebook selector for selecting, for each signal block, a corresponding codebook identification in accordance with a deterministic selection procedure that is independent of signal type; and
 means for encoding/decoding each signal block by using a codebook having said selected codebook identification.

13. The encoder/decoder of claim 12, including

several sets of codebooks;

a set selector for determining, for each signal block, a corresponding set of codebooks based on previously determined values of other signal block characterizing parameters;

a codebook selector for selecting, for each signal block, a corresponding codebook identification in the determined set in accordance with a deterministic selection procedure that is independent of signal type; and

means for encoding/decoding each signal block by using a codebook from said determined set having said selected codebook identification.

14. The encoder/decoder of claim 12, including

a codebook selector for selecting, for each signal block, a corresponding codebook identification in accordance with a deterministic selection procedure that is independent of signal type;

several sets of codebooks;

a set selector for determining, for each signal block, a corresponding set of codebooks based on previously determined values of other signal block characterizing parameters; and

means for encoding/decoding each signal block by using a codebook from said determined set having said selected codebook identification.

15. The encoder/decoder of claim 12, 13 or 14, wherein said codebook selector cyclically steps through each codebook identification in said sets of codebooks.

16. The encoder/decoder of claim 12, 13 or 14, wherein said codebook selector randomly steps through each codebook identification in said sets of codebooks.

17. The encoder/decoder of claim 12, wherein said codebooks are fixed codebooks.

18. The encoder/decoder of claim 17, wherein said codebooks are algebraic codebooks.

19. A codebook selection method for multi-codebook fixed bitrate CELP signal block encoding/decoding, including the step of:

selecting, for each signal block, a corresponding codebook identification in accordance with a deterministic selection procedure that is independent of signal type.

20. The method of claim 19, wherein said deterministic selection procedure is defined by cyclically stepping through each codebook identification in a set of codebooks.

21. The method of claim 19, wherein said deterministic selection procedure is defined by randomly stepping through each codebook identification in a set of codebooks.

22. A codebook selection apparatus for multi-codebook fixed bitrate CELP signal block encoding/decoding, including:

a codebook selector for selecting, for each signal block, a corresponding codebook identification in accordance with a deterministic selection procedure that is independent of signal type.

23. The encoder/decoder of claim 22, characterized by said codebook selector (22) cyclically stepping through each codebook identification in a set of codebooks.

24. The encoder/decoder of claim 22, wherein said codebook selector (22) randomly steps through each codebook identification in a set of codebooks.

25. An algebraic multi-codebook structure, wherein

each codebook has separate tracks with different predetermined allowed pulse positions and excluded pulse positions; and

each codebook has different excluded pulse positions.
